

WE CLAIM:

1. An electrical connector adapted for use with first to fifth electronic cards, the first to fifth electronic cards being formed with a respective set of conductive contacts and having different specifications, said electrical connector comprising:

a dielectric connector housing having top and bottom walls opposite to each other in a first direction, a rear wall interconnecting said top and bottom walls, and lateral walls opposite to each other in a second direction, interconnecting said top and bottom walls and cooperating with said rear wall and said top and bottom walls so as to confine a card accommodating groove, said dielectric connector housing further having a front open side opposite to said rear wall in a third direction for access into said card accommodating groove,

said top wall having a first inner mounting surface and a first outer mounting surface opposite to said first inner mounting surface, said bottom wall having a second inner mounting surface and a second outer mounting surface opposite to said second inner mounting surface, each of said lateral walls having an inner surface,

said first and second inner mounting surfaces of said top and bottom walls, said inner surfaces of said lateral walls and said rear wall configuring said card accommodating groove with a first card receiving space adapted to receive the first electronic card therein,

said inner surface of each of said lateral walls being formed with an elongate engaging groove that has a narrowest first portion, a widest second portion opposite to said first portion in the second direction, in spatial communication with said card accommodating groove, and having a width in the first direction less than a distance between said first and second inner mounting surfaces of said top and bottom walls, and a third portion interconnecting said first and second portions, said first portion of said engaging groove in said inner surface of each of said lateral walls having first top, bottom and lateral limit walls, said first top, bottom and lateral limit walls of said first portions of said engaging grooves in said lateral walls and said rear wall configuring said card accommodating groove with a second card receiving space adapted to receive the second electronic card therein,

said second portion of said engaging groove in each of said lateral walls having a front part proximate to said front open side of said dielectric connector housing, and a rear part between said front part and said rear wall,

said front part of said second portion of said engaging groove in one of said lateral walls having a first front top limit wall,

said rear part of said second portion of said engaging groove in said one of said lateral walls having a first

rear top limit wall connected to said first front top limit wall, a first rear top shoulder wall connected to said first rear top limit wall, and a first rear limit wall connected to said first rear top limit wall and
5 said first rear top shoulder wall,

said front part of said second portion of said engaging groove in the other one of said lateral walls having a second front top limit wall, a second front bottom limit wall opposite to said second front top limit wall in the first direction, and a second front bottom shoulder wall connected to said second front bottom limit wall,
10 wall,

said rear part of said second portion of said engaging groove in the other one of said lateral walls having
15 a second rear top limit wall connected to said second front top limit wall, a second rear top shoulder wall connected to said second rear top limit wall, a second rear bottom limit wall connected to said second front bottom limit wall, a second rear bottom shoulder wall
20 connected to said second rear bottom limit wall, and a second rear limit wall connected to said second rear top and bottom limit walls and said second rear top and bottom shoulder walls,

said third portion of said engaging groove in each
25 of said lateral walls having a front part proximate to said front open side of said dielectric connector housing, and a rear part between said front part and said rear

wall,

said front part of said third portion of said engaging groove in said one of said lateral walls having a third front bottom limit wall and a third front bottom shoulder wall interconnecting said third front bottom limit wall and said first bottom limit wall of said first portion of said engaging groove in said one of said lateral walls,

said rear part of said third portion of said engaging groove in said one of said lateral walls having a third rear top limit wall connected to said first rear top shoulder wall of said second portion of said engaging groove in said one of said lateral walls, a third rear bottom limit wall connected to said third front bottom limit wall, and a third rear limit wall connected to said third rear top and bottom limit walls,

said front part of said third portion of said engaging groove in the other one of said lateral walls having a fourth front bottom limit wall and a fourth front bottom shoulder wall interconnecting said fourth front bottom limit wall and said first bottom limit wall of said first portion of said engaging groove in the other one of said lateral walls,

said rear part of said third portion of said engaging groove in the other one of said lateral walls having a fourth rear top limit wall connected to said second rear top shoulder wall of said second portion of said engaging groove in the other one of said lateral walls,

a fourth rear bottom limit wall connected to said fourth front bottom limit wall, and a fourth rear limit wall connected to said fourth rear top and bottom limit walls,

5 said first front and rear top limit walls, said first rear top shoulder wall, said first rear limit wall, said second front and rear top limit walls, said second rear top shoulder wall, said fourth front and rear bottom limit walls and said second rear limit wall configuring said card accommodating groove with a third card receiving space adapted to receive the third electronic card therein,

15 said first front and rear top limit walls, said first rear top shoulder wall, said first rear limit wall, said second front and rear top limit walls, said second rear top shoulder wall, said second front and rear bottom limit walls, said second front and rear bottom shoulder walls and said second rear limit wall configuring said card accommodating groove with a fourth card receiving space adapted to receive the fourth electronic card therein,

20 said first and second front top limit walls, said third and fourth front bottom limit walls, said third and fourth front bottom shoulder walls and said third and fourth rear limit walls configuring said card accommodating groove with a fifth card receiving space adapted to receive the fifth electronic card therein; and

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conductive terminal means mounted on said dielectric connector housing, extending into said card accommodating groove, and adapted to contact electrically the conductive contacts on one of the first to fifth electronic cards when said one of the first to fifth electronic cards is inserted into a corresponding one of said first to fifth card receiving spaces through said front open side of said dielectric connector housing.

2. The electrical connector as claimed in Claim 1, wherein said conductive terminal means includes:

a set of first conductive terminals mounted on said rear wall, each of said first conductive terminals having a first coupling end portion extending outwardly of said rear wall and a first contacting end portion opposite to said first coupling end portion, projecting into said first card receiving space, and adapted to contact electrically a corresponding one of the conductive contacts on the first electronic card when the first electronic card is inserted into said first card receiving space through said front open side of said dielectric connector housing;

a set of second conductive terminals mounted on said first inner mounting surface of said top wall, each of said second conductive terminals having a second coupling end portion extending outwardly of said rear wall and a second contacting end portion opposite to

said second coupling end portion, projecting into said second card receiving space, and adapted to contact electrically a corresponding one of the conductive contacts on the second electronic card when the second electronic card is inserted into said second card receiving space through said front open side of said dielectric connector housing;

a set of third conductive terminals mounted on said second outer mounting surface of said bottom wall, each of said third conductive terminals having a third coupling end portion extending outwardly of said rear wall and a third contacting end portion opposite to said third coupling end portion, projecting into said third and fourth card receiving spaces, and adapted to contact electrically a corresponding one of the conductive contacts on one of the third and fourth electronic cards when said one of the third and fourth electronic cards is inserted into the corresponding one of said third and fourth card receiving spaces through said front open side of said dielectric connector housing; and

a set of fourth conductive terminals mounted on said first outer mounting surface of said top wall, each of said fourth conductive terminals having a fourth coupling end portion extending outwardly of said rear wall and a fourth contacting end portion opposite to said fourth coupling end portion, projecting into said fifth card receiving space, and adapted to contact

electrically a corresponding one of the conductive contacts on the fifth electronic card when the fifth electronic card is inserted into said fifth card receiving space through said front open side of said dielectric connector housing.

3. The electrical connector as claimed in Claim 2, wherein said top wall of said dielectric connector housing is formed with a through hole unit which permits extension of said fourth contacting end portions of said fourth conductive terminals into said fifth card receiving space therethrough.

4. The electrical connector as claimed in Claim 2, wherein said bottom wall of said dielectric connector housing is formed with a through hole unit which permits extension of said third contacting end portions of said third conductive terminals into said third and fourth card receiving spaces therethrough.

5. The electrical connector as claimed in Claim 2, wherein said rear wall is formed with a plurality of mounting holes that respectively permit extension of said first coupling end portions of said first conductive terminals and said second coupling end portions of said second conductive terminals therethrough.

6. The electrical connector as claimed in Claim 1, wherein said first card receiving space is adapted to accommodate a memory stick card.

7. The electrical connector as claimed in Claim 1,

wherein said second card receiving space is adapted to accommodate a smart media card.

8. The electrical connector as claimed in Claim 1, wherein said third card receiving space is adapted to
5 accommodate a multimedia card.

9. The electrical connector as claimed in Claim 1, wherein said fourth card receiving space is adapted to accommodate a secure digital card.

10. The electrical connector as claimed in Claim 1, wherein said fifth card receiving space is adapted to
10 accommodate an XD card.

11. An electrical connector adapted for use with memory stick, smart media, multimedia, secure digital and XD cards, each of which is formed with a respective set
15 of conductive contacts, said electrical connector comprising:

a dielectric connector housing having top and bottom walls opposite to each other in a first direction, a rear wall interconnecting said top and bottom walls,
20 and lateral walls opposite to each other in a second direction, interconnecting said top and bottom walls and cooperating with said rear wall and said top and bottom walls so as to confine a card accommodating groove, said dielectric connector housing further having a front
25 open side opposite to said rear wall in a third direction for access into said card accommodating groove, said card accommodating groove being configured with first

to fifth card receiving spaces adapted to receive one at a time the memory stick, smart media, multimedia, secure digital and XD cards respectively therein; and

5 conductive terminal means mounted on said dielectric connector housing, extending into said card accommodating groove, and adapted to contact electrically the conductive contacts on one of the memory stick, smart media, multimedia, secure digital and XD cards when said one of the memory stick, smart media,
10 multimedia, secure digital and XD cards is inserted into a corresponding one of said first to fifth card receiving spaces through said front open side of said dielectric connector housing.